

### **REMARKS**

Claims 1-14 are pending in this application.

Claims 1 and 14 has been amended by this amendment. Claims 2-6, 8, and 11 have been cancelled without disclaiming its subject matter.

#### **I. Election/Restriction**

The examiner stated as follows:

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1, 7, 9-10, in part, and 12-14, drawn to compounds of formula I given by formulas 2-7 in claims 5-10, classified in class 546 and various subclasses.

II. Claims 11, drawn to formula I wherein X is a bidendate ligand, classified in class 546 and various subclasses. A further election of a single disclosed species is required. May be subject to further restriction.

III. Claims 1, 2, 3 and 4 drawn to formula other than in Group I, classified in various classes and subclasses. May be subject to further restriction.

The applicant provisionally elects Invention I (claims 1-4, 5-10 and 12-14) with traverse for the following reasons.

#### **1. Invention II is within Invention I.**

The examiner argued that Invention II (claim 11), drawn to formula I wherein X is a bidendate ligand.

However, claim 1, line 12, expressly recites that "X is a bidentate ligand." Accordingly, Invention II includes all the claims. The examiner's reasoning is not correct.

## **2. The inventions I, II and III are related.**

The examiner stated that Inventions I, II and III are unrelated, and that the different inventions have different formula and a core, and the bonding and function are hence different.

The examiner's reasoning is improper.

Claim 1 is an independent claim. Claims 2 through 14 directly or indirectly depend from claim 1. That is, the scopes of dependent claims 2 through 14 are within the independent claim 1. It is hardly understood how the valid dependent claims are not related to its parent claim 1. Furthermore, dependent claims 2 through 14 further limit the independent claim 1 by either (1) adding elements or (2) providing a more detailed description of a previously introduced element.

The independent claim 1 is directed to the formula (1). Claims 2 and 3 further define the formula (1) of claim 1 as the formulae (1a) and (1b). Claims 4 and 11 further limit claim 1 by providing a more detailed description of "X." Claims 5 through 10 further limit claim by providing a preferred exemplary compound of the formula (1). Claims 12 through 14 further limit the independent claim 1 by adding elements.

All the claimed compounds are within the scope of the compounds represented by the formula (1).

In addition, as stated in the specification, all the claims provide a red luminescent compound with improved luminescent efficiency. Particularly, all the claims provide a red luminescent material and offers higher energy transfer efficiency and luminescent efficiency due

to its specific conformation.

That is, all the claims are related to the red luminescent compound with improved luminescent efficiency.

Therefore, the examiner's reasoning is not proper.

**3. The examiner failed to meet the prima facie showing required for the restriction requirement, and the search for Invention I necessarily includes the search for Inventions II and III.**

While the examiner argued that Inventions I, II, and III are unrelated, the examiner also recited the reasoning for the related distinct inventions.

The examiner stated that, "because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper."

Unlike the examiner's statement, the examiner provided only the reason why Inventions I, II, and III are unrelated.

Even assuming that the examiner alternatively argued that Inventions I, II and III are related but distinct, the examiner's reasoning is not correct.

The examiner did not show a separate status in the art as shown by their different classification. The examiner's classification showed only class 546. Merely arguing "various subclasses" is not enough to meet the examiner's burden of showing "separate status."

Also, it is hardly understood how the search for the independent claim 1 (i.e., Invention I) is not required for other dependent claims (i.e., Inventions II and III). To determine the

patentability of claim 1, the examiner cannot limit the search for claim 1 only to a portion of the scope of claim 1 (i.e., only to the scope of the compounds of formula 2-7). In other words, to determine patentability of claim 1, the examiner must search the full scope of claim 1. It means that the search for claim I necessarily includes the search for the other claims (i.e., Inventions II and III).

The applicant respectfully requests the examiner to reconsider and withdraw the restriction requirement.

## **II. Claim Rejections – 35 U.S.C. §112**

Claim 14 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 14 has been amended to more clearly define the present invention.

Withdrawal of the rejection is respectfully requested.

## **III. Claim Rejections – 35 U.S.C. §103**

Claims 1-10 and 12-14 stand rejected under 35 U.S.C. 103(a) as being unpatentable over US 2002/0034656 A1. March 2002.

The examiner argued that the '656 publication discloses a similar Ir based compound such as the compound having the formula of Fig.49, and that positional isomers are not considered to be patentably distinct unless there is a showing of unexpected results.

The examiner failed to show a prima facie case of obviousness.

Isomerism by itself should not raise a prima facie case of obviousness. *Ex parte Mowry*, 91 USPQ 219, 221 (Bd. Pat. App. 1950). MPEP §2144.09 also recites this decision: "Isomers having the same empirical formula but different structures are not necessarily considered equivalent by chemists skilled in the art and therefore are not necessarily suggestive of each other. (claimed cyclohexylstyrene not prima facie obvious over prior art isohexylstyrene).

Indeed, the Federal Circuit has admonished against generalizing, especially in the area of chemical structural obviousness, requiring proof in the prior art to support a proposed structural change. See *In re Grabiak*, 769 F.2d 729, 731-32, 226 USPQ 870, 872 (Fed. Cir. 1985) (finding no prima facie obviousness where the prior art did not suggest appellant's substitution of a thioester for an ester substituent on a carboxamide compound). A generalized conclusion based on isomerism alone also did not support a prima facie case of obviousness in *Ex parte Hogg*, 121 USPQ 96 (Bd. Pat. App. 1958).

Here, the examiner improperly applied to a generalized conclusion based on an isomerism alone. It should be noted that there is no suggestion or motivation to modify the '656 publication.

In addition, the specification of the present invention expressly states that the claimed compounds solve the problems of the compounds of the '656 publication.

Accordingly, the examiner cannot presume that the claimed compounds and the compounds of the '656 publication have the similar properties or results.

Even if the examiner's presumption is proper, the presumption of obviousness based on a reference disclosing structurally similar compounds may be overcome where there is evidence showing there is no reasonable expectation of similar properties in structurally similar compounds.

*In re May*, 574 F.2d 1082, 197 USPQ 601 (CCPA 1978)

The claimed invention is not directed to a phenyl quinoline itself. The claimed invention is directed to an Ir based complex having a phenyl quinoline group. That is, the Ir based complex has a different conformation according to ligands. Where the Ir based complex has a ligand having the same empirical formula but different structures, the conformation of the Ir based complex changes according to the structure of the ligand. This different conformation is translated to a different result. The specification expressly states that higher energy transfer efficiency and luminescent efficiency is attributed to the specific conformation of the formula 1.

A *prima facie* case of obviousness based on structural similarity is rebuttable by proof that the claimed compounds possess unexpectedly advantageous or superior properties. *In re Papesch*, 315 F.2d 381, 137 USPQ 43 (CCPA 1963) (**Affidavit evidence which showed that claimed triethylated compounds possessed anti-inflammatory activity whereas prior art trimethylated compounds did not was sufficient to overcome obviousness rejection based on the homologous relationship between the prior art and claimed compounds.**); *In re Wiechert*, 370 F.2d 927, 152 USPQ 247 (CCPA 1967) (a 7-fold improvement of activity over the prior art held sufficient to rebut *prima facie* obviousness based on close structural similarity).

Here, the applicant expressly stated in the original specification that the compounds according to present invention has excellent luminescent efficiency and film stability, whereas it is expressly stated in the specification that the compounds disclosed in U.S. 2002/0121638A1 and U.S 2002/0034656 A1 still require improvements in luminescent efficiency and film stability. (See the specification on page 3, lines 7-12).

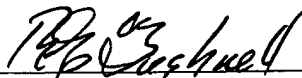
The examiner disregarded the above descriptions in the specification, and merely argued that the claimed inventions are obvious and there is no unexpected results shown by the applicant.

Withdrawal of the rejection is respectfully requested.

In view of the above, all claims are submitted to be allowable and this application is believed to be in condition to be passed to issue. Reconsideration of the rejections is requested. Should any questions remain unresolved, the Examiner is requested to telephone Applicant's attorney.

No fees are incurred by this Amendment.

Respectfully submitted,



Robert E. Bushnell,  
Attorney for the Applicant  
Registration No.: 27,774

1522 "K" Street N.W., Suite 300  
Washington, D.C. 20005  
(202) 408-9040

Folio: P56916  
Date: 4/21/05  
I.D.: REB/JHP